

**TOPIC NUMBER:**

AF073-113

**TOPIC TITLE:**

Hydrophobic/  
Non-Delaminating  
Radome Material

**CONTRACT  
NUMBER:**

FA8224-10-C-0025

**SBIR  
COMPANY  
NAME:**

Infinite Technologies,  
Inc.  
Clearfield, UT

**TECHNICAL  
PROJECT  
OFFICE:**

Air Force  
Sustainment Center,  
Hill AFB, UT

**SPONSORING  
ORGANIZATION:**

Air Force  
Sustainment Center

**PUBLISHED:**

February 2018



*Research and development conducted by Infinite Technologies, Inc. under the Air Force Small Business Innovation Research and Small Business Technology Transfer Program managed resulted in an advanced composite radome technology. (Courtesy photo)*

## TECHNOLOGY EXTENDS MAINTENANCE SCHEDULE FOR ASSETS IN HARD TO REACH PLACES

When putting together a radome assembly, which covers a radar or communication system, to protect it from harsh environmental conditions and allowing for its continued, uninterrupted transmission, safety and efficiency are paramount. Infinite Technologies Inc. has a tried and tested solution.

“Our office performs field maintenance and repair on shelters, radomes and towers for all major commands,” said David Lindquist from the Engineering Directorate at Hill AFB, Utah. “There a lot of these assets that are located in some very harsh conditions. We’ve got some of these in very remote areas of Alaska, that get snow and ice blasting on them out in the middle of nowhere, up on the coast, in all environments, in corrosive and arid environments. Some of these sites are very expensive to get to - you have to take charter flights just to get to them - and it’s tough to get material there.

*continued >*

According to maintenance personnel weather is one of their biggest challenges. Further, they note that the resulting cost associated with one action on a radome can be as much as \$75,000. As a result, reducing maintenance costs and the frequency with which maintenance occurs on these radomes can result in huge savings.

## BEHIND THE TECHNOLOGY

Research and development conducted by Infinite Technologies, Inc., headquartered in El Dorado Hills, California, under the Air Force Small Business Innovation Research and Small Business Technology Transfer Program managed by Ogden Air Logistics Center resulted in an advanced composite radome technology that requires little to no maintenance.

“The technology [Infinite Technologies developed] effects the Air Force mission in that it provides greater operational time for the elements that are protected by these radomes,” said Bob Spencer from Infinite Technologies. “Protection of the warfighter and warfighter safety is paramount. If they have to spend more time focused on maintenance, failing systems, or on trying to [maintain] the support [their systems should be providing], it makes it difficult for them, its time consuming, and it’s very costly.”

“When we first started working with the Air Force on the SBIR program, we had some ideas and concepts on fastening, as well as radome panels. [Our ideas consisted of] bringing panels together in a quick, rapid way,” Spencer added. “The technologies that we’ve developed, have been proven, tested, and are providing lower cost systems, safer environments, and more reliable, durable hardware.”

This technology reduces the initial time of installation and eliminates planned maintenance schedules, stretching them out significantly. Not only does implementation of the technology save time, but it also results in a reduction

in manpower, and reduces the total life cycle for these hardware elements.

“[Infinite Technologies] came in, they’re experienced with radomes, they understood our issues, and they have been working with us to develop these new technologies to help reduce our maintenance costs,” Lindquist recalled. “They’ve been a part of our team --a very good part of our team.”

According to Lindquist, the Air Force conducted a cost benefit analysis to determine the impact of longer-life radome technology. The analysis showed that extending the maintenance from every 1 to 3 years to 9 years would result in a savings of \$130 million. Infinite Technologies’ solution has exceeded expectations by extending the maintenance out to 15 years. As a result, the Air Force is evaluating a fleet wide replacement on one of the radomes for the Early Warning System. That endeavor alone could result in \$10 million in savings over the remaining life of the system.

## SBIR SUPPORT WAS VITAL

“Our company has been solely funded for these technology developments by internal dollars, and by the Air Force’s SBIR effort, including the Commercialization Readiness Program,” Spencer said. “We would have never been able to make this happen without the Air Force SBIR program.”

“When we first developed the technology, the government was our main customer. The Air Force, the Marine Corps, the Army, and the Navy have all been purchasing this technology from us and benefiting from it. We have also taken this technology and commercialized it, and [now] we provide it all over the world.”



U.S. AIR FORCE

### AIR FORCE SBIR/STTR PROGRAM

AFRL/SB | 1864 4TH STREET | WRIGHT-PATTERSON AIR FORCE BASE | OHIO | 45433  
800-222-0336 | AFSBIRSTTR-INFO@US.AF.MIL | WWW.AFSBIRSTTR.COM